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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,597

10/02/2006

Sylvain Capouilliet

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EXAMINER

BOLDA, ERIC L

ART UNIT

PAPER NUMBER

3663

MAIL DATE

DELIVERY MODE

02/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,597	Applicant(s) CAPOUILLIET ET AL.	
	Examiner ERIC BOLDA	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11, 12 is/are rejected.
- 7) ☒ Claim(s) 5-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Nov. 28, 2008 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1 have been considered but are moot in view of the new ground(s) of rejection. Specifically, the new limitations are disclosed or in the alternative made obvious by a combination of previously cited references (see below).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 11, and 12 is rejected under 35 U.S.C. 102(b) as anticipated by Liang (US 6,493,133).

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5. Liang discloses in Fig. 3 an optical signal processor device, for use with an information-carrying signal, comprising means for suppressing backscattered signals in the optical transmission means, comprising

- An optical propagation medium (302)) being connected in parallel at two connection points, to the optical transmission means (303), and
- divertor means (circulators)(301b),(3010) being arranged for diverting to this optical propagation medium, any signal propagating in the opposite direction (from right to left) of the information-carrying signal (traveling from left to right) in the optical transmission means
- At least a portion of the means for optical transmitting an information-carrying signal extending between the two divertors
- Wavelength discrimination means (F1) discriminating between a Rayleigh backscattering signal (BRS) and signals at other wavelengths λ_1 , e. g. pump signals. Note that the amplifiers (306), (307) may be Raman amplifiers, and therefore are pumped by pump light.

The clause "*a pump signal intended to be back-propagated* in the optical transmission means" is essentially a statements of intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See MPEP § 2114.

In this case, since applicant's claim does not actually recite that the pump signal is back-propagated, but only wavelength discrimination means for discriminating between *a pump signal intended to be back-propagated* in the optical transmission means and a

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Rayleigh backscattering, the functionality of the device in the reference is sufficient to anticipate the claim.

With regard to claim 2, the divertor means are two circulators (310), (301b)

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
7. Claims 1,2, 11, and 12 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Liang (US 6,493,133) in view of Christodoulides (US 6,388,800).
8. With regard to claims 1,11 and 12, Liang discloses in Fig. 3 an optical signal processor device, for use with an information-carrying signal, comprising means for suppressing backscattered signals in the optical transmission means, comprising
 - An optical propagation medium (302)) being connected in parallel at two connection points, to the optical transmission means (303), and
 - divertor means (circulators)(301b),(301a) being arranged for diverting to this optical propagation medium, any signal propagating in the opposite direction (from right to left) of the information-carrying signal (traveling from left to right) in the optical transmission means (9th col. lines 36-39)
 - At least a portion of the means for optical transmitting an information-carrying signal extending between the two divertors
 - Liang discloses that the amplifiers (306), may be Raman amplifiers (7th col. lines 27-29), but does not specify the pumping configuration.

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- Filters F1 and F2 to reduce backward Rayleigh scattered scattering (BRS)

However, Christodoulides discloses in Fig. 12 an optical fiber Raman amplifier, including a counterpropagating pump and a configuration similar to Liang.

- A divertor means (circulator (64) separates the signal wavelength output and counterpropagating pump wavelength , and separates them again at (62). This configuration is the same as the top half of Liang's Fig. 3, except that the second wavelength is now corresponding to pumping light rather than another signal light.
- the optical propagation medium (optical fiber (68) and (70) is the Raman amplifier (Note that the directions of signal and pump are reversed from Applicant's Fig. 2; this does not distinguish between the devices). The pumping laser is located outside of the optical propagation medium (2nd col. lines 21-25).

Combining the configuration of Liang's Fig. 3 with the pumping arrangement of Christodoulides , results in applicant's invention. It would have been obvious to one skilled in the art (e. g. an optical engineer) to make such a combination, because the pumping for a Raman amplifier, already suggested by Liang, can then be done remotely, with advantages in the accessibility and control of the pumping laser.

With regard to claim 2, the divertor means are two circulators (310), (301b) (Liang).

9. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang or alternatively Liang in view of Christodoulides as applied to claim 1 above and further in view of Aina et al. (US 2001/002452).

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With regard to claim 3, Christodoulides does not disclose an optical functional module disposed on the optical transmission means between the two circulators. However, Aina discloses in Fig. 6a line site of an optical transmission system with optical functional modules, such as optical add drop multiplexer (670) and optical amplifier (640) situated on a parallel optical fiber(LB) to other optical fibers (HB). It would have been obvious to one skilled in the art (e. g. an optical engineer) to include the optical module(s) of Aina, for the purpose of removing and adding signals at certain wavelengths at intermediate transmitters and receivers (Aina et al. [0005]).

With regard to claim 4, the optical function module comprises an optical add/drop multiplexer (630) and optical amplifier (640) which functions to regenerates the signal.

Allowable Subject Matter

10. Claims 5-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric Bolda whose telephone number is 571-272-8104. The examiner can normally be reached on M-F from 8:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Jack Keith, can be reached on 571-272-6878. Please note the fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Eric Bolda/

Primary Examiner, Art Unit 3663